Numerous species of the genus *Zoanthus* have been described which resemble one another closely, and probably only differ slightly in their anatomy, so that the species can only be determined by the colour, the number and arrangement of the tentacles, &c. This is the reason why I have not given any specific name to the single specimen of the genus *Zoanthus* found among the Challenger material, in which the colour of the body and the nature of the tentacles could not be made out, and why I have refrained from giving any diagnosis of species, as from insufficient knowledge of the closely allied species it is impossible to determine which characteristics belong to the whole genus and which to the individual species.

The colony, which was about 4 cm. long and 2 cm. broad, was firmly attached to a stone, and consisted of some thirty individuals varying greatly in size. The smallest of these are little knobs which hardly project 1 to 2 mm. above the cœnenchyma, the largest are long cylindrical tubes, more than 1 cm. in length. They lie so thickly compacted that the cœnenchyma is almost entirely covered, and only shows here and there as a thin plate. The cœnenchyma is abundantly developed on the margin into stolons, which are alternately broad and narrow.

I made a thorough anatomical examination of three individual polyps of different sizes, which were highly contracted like all the animals of the colony. The upper end of the wall is not only contracted but inverted a little; the only indication of the point at which we can reach the interior of the body is a small navel-like depression. Apart from the folds caused by contraction, the surface of the body is perfectly smooth.

The wall (Pl. XIV. fig. 4) is of considerable thickness, and consists histologically of a homogeneous fundamental substance, with fine fibres embedded in it. The fibres are hardly double contoured, are slightly waved, and run sometimes directly, sometimes obliquely, from one epithelial surface to the other. They begin at the endoderm with a granular enlargement which seems to pass directly into the epithelium; towards the ectoderm they branch repeatedly behind one another. They are furnished with nuclei, and therefore bear a strong resemblance to the muscular fibres of the Ctenophora, but their state of preservation did not admit of determining the histological value of the fibres.

The cells of the connective substance are strongly granulated bodies, either rounded or branched.

Finally, we find canals in the wall, such as do not exist in any other Actiniaria, though they are found in the Alcyonaria. These canals vary greatly in diameter; the smaller are simple cords of cells, and only the larger ones show a lumen surrounded by a layer of epithelium. As the canals repeatedly ramify and anastomose, they form a thick net-work, which extends from the endoderm to the ectoderm, but is thickest near the latter. Kölliker's observations show that in the Alcyonaria the canals are produced from the ectoderm, which is also the case in *Zoanthus*; I have repeatedly found